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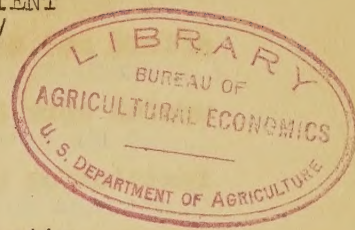




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AN APPRAISAL OF THE POLICIES AND PROCEDURE INVOLVED  
IN THE HATCH ACT FROM THE STANDPOINT OF AN EFFICIENT  
WAY OF ADMINISTERING PRODUCTIVE RESEARCH WORK. 1/

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The Hatch Act is considered here largely in the collective sense as including all four of the Federal acts granting funds to the States for agricultural research. For purposes of this discussion, a selected few of the more basic and widely influential policies and procedures involved in the Hatch and subsequent acts have been analyzed to bring out major features of their development affecting the administration of research at the stations.

It appears that the Hatch Act was the result of deliberate and purposeful planning for the future stability of agricultural research based upon existing experience and knowledge of requirements (1). Apparently the intent of early agricultural leaders was to establish the scientific identity of the agricultural experiment stations and especially to show that the conduct of research in agricultural science was their proper function as distinguished from experimental and demonstration farming. In support of this policy, Dr. W. O. Atwater, director of the first State agricultural experiment station, described the station, in his first annual report (2), as an institution where the rigid tests of scientific experiment may be used for gaining more certain understanding of the principles that underly the right practice of agriculture. The legislative resolution providing State support for this first agricultural experiment station specified that the funds were to be used in employing competent scientific men to carry on the appropriate work of an agricultural experiment station. Dr. Atwater's first annual

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report also stated that more abstract scientific investigations would afford not only the proper but also the most widely and permanently useful work of an agricultural experiment station and that such an institution would be worthy of the name in proportion as it carried on accurate and thorough investigations and experiments in agricultural science.

In further efforts to crystallize thought on scientific research, Commissioner Colman of the Department of Agriculture informed delegates from agricultural colleges and experiment stations in 1885 that much valuable time and a great deal of money were being lost in desultory and unmethodical experiments (3). In that connection, he distinguished between production and demonstration farming and scientific investigation, considering the latter a legitimate experiment station function. President Smith of the Maryland Agricultural College also was of the opinion that as an experiment station director, it was not his duty to raise crops as crops but that the legitimate work of an agricultural college should be experimental, the profit, while not undesirable, to be secondary and incidental.

These and other arguments by early agricultural leaders in behalf of scientific research make it clear that, in preparation for the Hatch Act, well-defined ideas as to the organization structure, essential character of personnel and physical equipment, and proper functions, duties, and responsibilities of an agricultural experiment station had been formulated and agreed upon. Out of these conceptions, standards had grown which were of such common usage as practically to constitute common law. The basic pattern of the modern agricultural experiment station was thus laid down and adopted in various forms by 28 States previous to the passage of the Hatch Act (1).



It was apparently with the calculated purpose of identifying the Hatch agricultural experiment stations with these essential standards and definitions that Section 1 of the Hatch Act was so worded as to authorize the establishment in each Land-Grant College "of a department to be known and designated as an 'agricultural experiment station'". The term "agricultural experiment station" appears in the text of the act in quotations implying reference to a previously formulated standard definition. The further provision of the act that the establishment of the stations was intended to promote scientific investigation and experiment respecting the principles and applications of agricultural science, considered in connection with the specification in Section 2 that the object and duty of the experiment stations are to conduct original researches or verify experiments, seems to have established the scientific character of the functions of the stations.

These passages of the act served ultimately as the basic authority for policy and procedure essential to the maintenance of the security and integrity of the experiment stations as scientific institutions. The significance of this is reflected in the action of an early Committee on Experiment Station Organization and Policy of the Association of American Agricultural Colleges and Experiment Stations who in 1906 found it necessary from past experience to insist on the strict observance of certain fundamentals in station organization affecting (1) relative authority of boards of trustees and station officers in station policy and conduct; (2) propriety in relations between boards of trustees and station officers; and (3) tenure of office and reasonable security of position of scientific personnel of station staffs (4). Early policies adopted to cover these points had a foundation of authority in the Hatch



Act with its historical and common law background which has for fifty years maintained the scientific integrity of the stations when interfered with unduly.

Early agricultural leaders recognized the importance of group action to the success of agricultural research. For example, in 1883 Dr. Atwater advocated the organization of an effective system of cooperative experimentation which would utilize the Department of Agriculture as an official and influential center from whence suggestions and plans for work would emanate and with whose aid all could work together (5). Likewise in 1887 the Committee on Experiment Station Work of the Association also pointed out the importance of full and frequent intercommunication in order that each station might be made constantly acquainted with the work of others and that conferences and consultation might be facilitated (6).

Accordingly, Section 2 of the Hatch Act authorized the conduct of "such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories". This section thus sounded the keynote and basic authority for effective coordination of the research of the stations. It appears to have been with the calculated purpose of providing machinery for establishing far-reaching coordination of agricultural research on the basis of mutually acceptable cooperative procedure that the early agricultural leaders incorporated in Section 3 of the Hatch Act the language "that in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation



of results of investigation or experiment; to indicate from time to time such lines of inquiry as to him shall seem most important, and, in general, to furnish such advice and assistance as will best promote the purpose of this act". In elaborating the policy of cooperation thus legalized, the first Secretary of Agriculture expressed the opinion that the inherent policy of the Hatch Act is that "the future usefulness of the stations will depend upon what they discover of permanent value". With this in mind, the Secretary pointed out that while the Government reserves the right to regulate the research which it endows, and while this regulating power is implied in the legislation by which the stations are established, such authority should be exercised mainly in the form of wise and sympathetic help. The Secretary was of the opinion that to be first among the stations, the Department should be the servant of them all and should exercise not dictatorship but leadership. Its influence should be powerful in bringing the stations together and in coordinating their work (7). This announcement of policy by the Secretary together with his further opinion that the most immediate and pressing need seemed to be for a clearing house and an exchange for the stations appeared to have been the first specification for the Office of Experiment Stations. His further suggestion of the importance of an abstract journal for the stations forecast the Experiment Station Record.

Accordingly, in 1889, the Association adopted resolutions that (1) groups of States should cooperate in the study of problems of common interest so far as feasible; (2) the Department of Agriculture should aid the stations singly and in groups as circumstances indicate; and (3) the stations should extend similar aid to the Department in the study of mutual



problems (8). The Association also made clear that the autonomy of the stations should be preserved. A policy was generally agreed upon that independent work be not undertaken in the individual State by the Department without informing the State station or consulting with it, particularly in lines of investigation in which the station was already engaged (9). Thus two generations ago policy and procedure of mutually acceptable and beneficial cooperation between the bureaus of the Department of Agriculture and the experiment stations, singly and in groups, was born of the Hatch Act.

When in intervening years the experiment stations were criticized for what was considered unnecessary duplication of research, there was general concurrence in the opinion that, under authority provided in the Hatch Act, cooperation could be used in scientific research to take advantage of essential and helpful duplication as well as to eliminate useless duplication (10). It appears to have been the opinion of the majority that there should be a limit to the duplication of station investigations especially in the more indirect and fundamental problems such as animal nutrition, plant genetics, etc. The inference was, however, that if by joint agreement among stations work of this character could be so distributed as to cover large sections or regions of the country having similar basic requirements and physical conditions, more efficient use might be made of available facilities and essential duplication in the service of all with a minimum of useless duplication. Thus an original conception of the regional laboratories now provided for by the Bank-Jones Act appears to have been developed on the basis of policies involved in the Hatch Act.



It apparently also was the general intention to apply the policy of cooperation and coordination to the individual station. The inference to be drawn from the many discussions of cooperation and coordination is that while the success of research was thought to depend upon the individuality as well as the ability of the men engaged in it, and freedom of research action and initiative were considered as among its first conditions, nevertheless, the opinion prevailed that effective cooperation and coordination begin at home (6). As the stations gained in experience it became apparent that before unity of purpose and action as between stations could be successfully attained, these policies and procedures must first become essential factors of the relationships between individuals and between scientific departments within stations. Emphasis was placed on this policy in 1911 by the Section on Experiment Station Work (11). Incidentally, this same policy was enunciated years later as a basis for the retrenchment and adjustment program of the stations (12).

Opinions thus matured early in the minds of agricultural leaders regarding the essential character of cooperation in agricultural research as provided for by the Hatch Act and the coordination of research facilities. To further the objectives of cooperative research, the Secretary of Agriculture in 1899 established a procedure whereby bureaus of the Department desiring cooperation with State experiment stations must present their plan to the Secretary for approval. Likewise, the stations desiring bureau cooperation were invited to present their needs to the Secretary. After approval by the Secretary, final plans for cooperation were worked out by the Office of Experiment Stations which was responsible to both parties (13). This plan appears to have been the beginning of formal cooperation between the experiment stations and the Department.



While the procedure of cooperation has been modified and improved through the years, its original essential features still endure. It became an extremely useful policy to the experiment stations early after its adoption and the Association in 1904 viewed with disfavor any movements which either by legislation or otherwise should tend to disturb or lessen the mutually advantageous relations then existing between the Department of Agriculture and the experiment stations (14). That it has fostered procedure widely agreed upon as being essential to the efficient conduct of productive research is attested to by the record for the past fiscal year of nearly 1,200 separate formal agreements and memoranda of understanding, covering cooperative research involving all the Department research bureaus and all the State experiment stations (15).

The experiment stations took quite literally the authorization in the Hatch Act for the verification of experiments and for the dissemination of the results of experimentation. This resulted early in the greater portion of the Hatch fund being used for these purposes and the need for original researches to provide essential fundamental information, while kept constantly in mind, was necessarily largely neglected. The Committee on Experiment Station Organization and Policy of the Association also took cognizance of the tendency toward lack of soundness and definiteness in station work and decried (1) lack of clear discrimination between investigation in a strict sense and ordinary experimental work; (2) lack of definiteness in the purpose and plan of investigations; (3) tendency to take up too large or too broad problems; (4) the outlining of too large a number of projects; and (5) tendency for administration of research to be concentrated in station departments rather than in the station director (4).



These and other difficulties were forerunners of the Adams Act which appropriated money "for the more complete endowment and maintenance of agricultural experiment stations now established". The Adams Act was thus subject to the conditions and limitations of the Hatch Act but was worded more rigidly with the calculated purpose of correcting some of the administrative practices which had grown up under the Hatch Act and which leaders in research considered questionable.

The Adams Act further specified that the funds authorized should be applied "only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States having due regard to the varying conditions and needs of the respective States and Territories". This limited specification authorized a type of research the purpose of which was to secure useful scientific facts of the permanence implied in the statement quoted above from the first Secretary of Agriculture (7). By repeating the language of the Hatch Act, it again emphasized the necessity for coordination as between States.

The passage of the Adams Act appears to have impressed agricultural leaders, including both administrators and investigators, with the wisdom of adopting the organized project system in research. Immediately after its passage, the Committee on Experiment Station Organization and Policy of the Association concluded that the intention of the act was to provide authority and means for carrying on investigations of a relatively high order with a view to the discovering of essential scientific principles which might be used in the permanent solution of the more difficult and fundamental problems of agriculture (4). To this end, the Committee considered it very desirable that careful attention be given to the choice of definite problems to be

studied and to the methods by which these problems are to be solved.

Accordingly, the Secretary of Agriculture in his instructions as to the administration and use of the Adams fund stated "in order that there may be no doubt as to the disposal of the Adams fund, each station should outline a definite program of experimental work" (16). The Committee on Experiment Station Organization and Policy of the Association found itself in accord with this policy (4). By general agreement, the plan of conducting the work of the experiment stations on the basis of well-defined and well-organized research projects was inaugurated.

In succeeding years the project as the tangible but flexible basic unit of research proved its value in the administration of productive endeavor by the stations, particularly as it related to the efficient use of available funds, personnel, and facilities, and as it served as a focus for concerted thought and action by all concerned in it. In discussing efficient experiment station administration, Director F. B. Mumford of Missouri in 1911 expressed the commonly accepted opinion that the apportionment of funds for definite projects is the best plan of all (17).

In view of the success of the project system for expending the Adams fund, the Secretary of Agriculture instructed that the funds authorized by the Purnell Act of 1925 be administered and used on the same basis (18). He emphasized the importance of this because the Purnell Act directed that the funds appropriated should be applied only to paying the necessary expenses of conducting investigations or making experiments in specified lines. The Secretary thus considered it important that work with the funds provided by the act should represent definite pieces of investigation of substantial character.



The Committee on Experiment Station Organization and Policy of the Association again found itself in full agreement with the Secretary. In 1926, the Committee pointed out that the passage of the Purnell Act as a supplement to the Hatch and Adams Acts and which opened new fields for investigation and provided increased support to research already established, emphasized the wisdom of maintaining standards previously agreed upon as being essential to satisfactory productive research. The Committee was of the opinion that to maintain these standards, critical examination should be made of the projects themselves before they are accepted for investigation. It was recommended that station committees for this purpose be made a part of the regular administrative policy of the stations (19). As a result, this procedure was widely adopted.

In 1927, the Committee on Organization and Policy again emphasized the need for more critical scrutiny in outlining new research projects and enumerated and defined the essential features of a project outline (20). The Committee reiterated this stand in 1931 and the minimum essentials of a project plan showing evidence of clearer and more deliberate planning and of more systematic, ordered effort were again laid down which would picture the merits of the project, its objectives, procedure as to technique and methods, the probable period of time required and its reasonableness, and the funds required and their adequacy for the proposed work (21). The resulting general tightening up in the organization and planning of projects was significant in the light of subsequent developments.

The policy of cooperation within and among stations and between the stations and the Department of Agriculture, together with the general adoption and gradual strengthening of the project system of research organization and administration by the stations stood them in good stead

during the lean years beginning with 1932. With reduced facilities, the stations were confronted with unprecedented demands for special emergency research in connection with the many essential recovery activities both State and Federal. To meet this situation and at the same time maintain essential standards of research, the Committee on Experiment Station Organization and Policy urged as guiding principles (1) the maintenance of well-qualified scientific men in key positions; (2) the consolidation of research facilities in the way of land, buildings, livestock, and scientific equipment under control of the director; (3) the strengthening of cooperation and coordination between stations and the Department of Agriculture; and (4) the centralization of all research financing on a project basis in the director's office (22). The emergency caught the stations with curtailed resources but found them scientifically strong and potentially sound in organization as regards work, finances, and internal and external relationships. The manner in which the stations adjusted and mobilized their facilities and met the emergency is history. There appears little doubt that the pertinent policies and procedures originating in the Hatch Act and developed and strengthened during the intervening years played an important part in the readiness of the stations to meet emergency demands.

Circumstances thus prepared the stations for the Bankhead-Jones Act of 1935. That act as it referred to research, reiterated, strengthened, and drove home the policies of and procedures inherent in the Hatch Act relating to the necessity for scientific soundness, strong cooperative relationships within and between stations and between the stations and the Department, and efficient organization and administration of the stations (23). As pointed out by the Committee on Projects and Correlation of Research, the act afforded new opportunity to strengthen and make more effective the Federal-State cooperation and to bring the States into closer relationship on



problems common to agricultural regions (24). The six regional laboratories now in operation are tangible evidence of the truth of this statement.

In conclusion, it is believed that the direct or implied provisions of the Hatch and subsequent acts discussed above have largely supplied the foundation for the present structure of widely useful policies and procedures which directly influence and largely govern the administration of productive research at the stations. These are:

1. Provision of a standardized pattern and definition for the agricultural experiment stations based upon long-established and generally accepted procedure.
2. Establishment of the scientific identity and status of the agricultural experiment stations.
3. Specification of the purpose, functions, and obligations of the agricultural experiment stations with the systematic manipulation of the natural and social sciences in the prosecution of agricultural research as the keynote and objective.
4. Justification for the general adoption of the organized specific project as the tangible but flexible basic unit in the administration of research.
5. Provision for and establishment of the basic principles and practice of cooperation within individual agricultural experiment stations, between agricultural experiment stations, and between the stations and the Department of Agriculture, and for the coordination of their facilities and research.

The character and significance of the many subsidiary and supplemental policies and procedures which have grown with time and experience out of the above-enumerated provisions appear to be such as to warrant careful study of them by experiment station officers as a basis for sound and productive administrative procedure.



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